OPTIONAL INFORMATION	
Name of School:	Date of Inspection:
Vocational Program/Course/Room:	Signature of Inspector:

ELECTRICAL - WIRING DESIGN AND PROTECTION
SELF INSPECTION CHECKLIST

Guidelines: This checklist covers some of the regulations issued by the U.S. Department of Labor - OSHA under Subpart S - 29 CFR 1910.304 and 1910.307 which were adopted by reference. It also deals with a selected regulation from N.J.A.C. 6:22 issued by the New Jersey Department of Education School Facility Planning Service. It applies to all electrical utilization systems. This checklist does not cover: installations in ships, watercraft, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles. **The questions that are most likely not the responsibility of the individual teacher are marked with an asterisk (*) next to the number of the question.** Definitions of underlined terms are provided at the end of the checklist to help you understand some of the questions. Questions marked with symbol (☞) may require the help of an outside expert. Any question marked with the symbol (☹) indicates a history of previous violations in vocational schools.

Regulations dealing with outside conductors, 600 volts, nominal, or less; services to buildings; overcurrent protection (fuses and circuit breakers) for over 600 volts, nominal; and grounding for over 1000 volts have not been addressed in this checklist. If any of these conditions are encountered, consult the OSHA regulations in 29 CFR 1910.304.

Use and Identification of grounded and Grounding Conductors — Please Circle

1.*☞ Are conductors used for grounding identified and distinguishable from all other conductors? [29 CFR 1910.304(a)(1)] — Y N N/A DK

Comments/Corrective Action

Note: Grounding conductors should be colored white according to the National Electric Code.

2.*☹ Have all grounded conductors maintained the designated polarity when attached to a terminal or lead? [29 CFR 1910.304(a)(2)] Y N N/A DK

Note: Electrical outlets (receptacles) when tested with a circuit analyzer should not show a reversed polarity, open neutral or neutral reversed with any other line.

3. Is the use of a grounding terminal, or grounding-type device on a receptacle, cord connector, or plug attachment prohibited except for the purpose of grounding? [29 CFR 1910.304(a)(3)] Y N N/A DK

Overcurrent Protection
600 Volts, Nominal, or Less

4.* Are conductors and equipment protected from overcurrent in accordance with their ability to safely conduct current? [29 CFR 1910.304(e)(1)(I)] Y N N/A DK

5.*☞ Except for motor running overload protection, are overcurrent devices designed so as to not interrupt the continuity of the grounded conductors unless all conductors of the circuit are opened simultaneously? [29 CFR 1910.304(e)(1)(ii)] Y N N/A DK

6.* Except for service fuses, are all cartridge fuses which are accessible to other than qualified persons and all fuses and thermal cutouts on circuits over 150 volts to ground, provided with disconnecting means? [29 CFR 1910.304(e)(1)(iii)] Y N N/A DK

Comments/Corrective Action

7.*	Is this disconnecting means installed so that the fuse or thermal cutout can be disconnected from its supply without disrupting service to the equipment and circuits unrelated to those protected by the overcurrent device? [29 CFR 1910.304(e)(1)(iii)]	Y N N/A DK
8.*	Are overcurrent devices readily accessible to all authorized personnel? [29 CFR 1910.304(e)(1)(iv)]	Y N N/A DK
9.*	Are the overcurrent devices so located that they will not be exposed to physical damage nor located in the vicinity of easily ignitable material? [29 CFR 1910.304(e)(1)(iv)]	Y N N/A DK
10.*	Are fuses and circuit breakers so located or shielded that people will not be burned or otherwise injured by their operation? [29 CFR 1910.304(e)(1)(v)]	Y N N/A DK
11.*	Are circuit breakers clearly indicated whether they are in the open (off) or closed (on) position? [29 CFR 1910.304(e)(1)(vi)(A)]	Y N N/A DK
12.*	When circuit breaker handles on switchboards are operated vertically rather than horizontally or rotationally, is the up position the closed (on) position? [29 CFR 1910.304(e)(1)(vi)(B)]	Y N N/A DK
13.*	On switches in 120 volt fluorescent lighting circuits, is the circuit breaker approved for this purpose and marked "SWD". [29 CFR 1910.304(e)(1)(vi)(C)]	Y N N/A DK
14.*	Are 125 volt, single-phase, 15 and 20 amp receptacles, when installed within a six foot radius of sinks, equipped with a ground-fault circuit interrupter? [N.J.A.C. 6:22-5.4(f)6]	Y N N/A DK

Comments/Corrective Action

15.* Are 125 volt, single-phase, 15 and 20 amp receptacles, when installed outdoors, equipped with a ground-fault circuit interrupter? [N.J.A.C. 6:22-5.4(f)5] Y N N/A DK

16.* Are all overcurrent devices legibly marked to indicate its purpose? [29 CFR 1910.303(f)] Y N N/A DK

Grounding

17.*☞ Are all neutral conductors grounded in all three-wire DC systems? [29 CFR 1910.304(f)(1)(I)] Y N N/A DK

18.*☞ Are all two-wire DC systems operating at 50 volts through 300 volts between conductors grounded? [29 CFR 1910.304(f)(1)(ii)] Y N N/A DK

Note: Exceptions to this requirement are permitted when a) they supply only industrial equipment in limited areas and are equipped with a ground detector; or b) they are fire-protective signaling circuits having a maximum current of 0.030 amperes.

19.*☞ Are all AC circuits of less than 50 volts grounded when they are installed as overhead conductors outside of a building or when they are supplied by transformers and the transformer primary supply system is ungrounded or exceeds 150 volts to ground? [29 CFR 1910.304(f)(1)(iii)] Y N N/A DK

20.*☹ Are all AC systems of 50 volts to 1,000 volts grounded? [29 CFR 1910.304(f)(1)(iv)] Y N N/A DK

Comments/Corrective Action

Note: See regulations in 29 CFR 1910.304(f)(1)(v) for possible exemptions to this requirement. Electrical outlet receptacles should not indicate an open ground when tested with a circuit analyzer.

21.*☞ For AC premises wiring systems, is the identified conductor grounded? [29 CFR 1910.304(f)(2)] Y N N/A DK

22.*☞ When systems are grounded, is a grounding electrode conductor used to connect both the equipment grounding conductor and the grounded circuit conductor to the grounding electrode? [29 CFR 1910.304(f)(3)(i)] Y N N/A DK

Note: This is only determined at the main service or vault.

23.*☞ Are both the equipment grounding conductor and the grounding electrode conductor connected to the grounded circuit conductor on the supply side of the service disconnecting means, or on the supply side of the system disconnecting means or overcurrent device if the system is separately derived? [29 CFR 1910.304(f)(3)(I)] Y N N/A DK

24.*☞ On ungrounded service-supplied systems, is the equipment grounding conductor connected to the grounding electrode conductor at the service equipment? [29 CFR 1910.304(f)(3)(ii)] Y N N/A DK

25.*☹ Is the path to ground from circuits, equipment, and enclosures permanent and continuous? [29 CFR 1910.304(f)(4)] Y N N/A DK

Comments/Corrective Action

26.*☞ Are metal cable trays, metal raceways and metal enclosures for conductors grounded? [29 CFR 1910.304(f)(5)(i)] Y N N/A DK

Note: See regulations in 29 CFR 1910.304(f)(5)(i) for possible exemptions to this requirement.

27.*☞ Are metal enclosures for service equipment grounded? [29 CFR 1910.304(f)(5)(ii)] Y N N/A DK

28.*☞ Are frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and metal outlets or conjunction boxes which are part of the circuit for these appliances grounded? [29 CFR 1910.304(f)(5)(iii)] Y N N/A DK

29.*☹ Are exposed non-current-carrying metal parts of fixed equipment which may be energized grounded? [29 CFR 1910.304(f)(5)(iv)] Y N N/A DK

30.*☹ Are all exposed non-current-carrying metal parts of cord and plug connected equipment grounded? [29 CFR 1910.304(f)(5)(v)] Y N N/A DK

Note: This applies to metal cases of tools and equipment except ones double insulated.

31.*☞ Is the non-current-carrying metal parts of fixed equipment, when required to be grounded by this subpart, grounded by an equipment grounding conductor which is contained in the same raceway, cable, or cord, or runs with or encloses the circuit conductors? [29 CFR 1910.304(f)(6)(i)] Y N N/A DK

Note: For DC circuits only, the equipment grounding conductor may be run separately from the circuit conductors.

Comments/Corrective Action

Hazardous Locations

32.	Is all equipment, wiring methods and installations of equipment in hazardous (classified) locations intrinsically safe, approved for the hazardous location, or safe for the hazardous location? [29 CFR 1910.307(b)]	Y	N	N/A	DK
33.	Is equipment approved not only for the class of location but also for the ignitable or combustible properties of the specific gas, vapor, dust, or fiber that will be present? [29 CFR 1910.307(b)(2)(I)]	Y	N	N/A	DK
34.	Is equipment in a hazardous location marked to show the class, group and operating temperature? [29 CFR 1910.307(b)(2)(ii)]	Y	N	N/A	DK
35.	Are all conduits threaded and made wrench-tight? [29 CFR 1910.307(c)]	Y	N	N/A	DK

Definitions:

Disconnecting means means a device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

Ground-fault circuit interrupter (GFCI) is a fast-acting circuit breaker which senses small imbalances in the circuit caused by current leakage to ground and, if a fraction of a second, shuts off the electricity.

Grounded means connected to earth or to some conducting body that serves in place of the earth.

Comments/Corrective Action

Grounded conductor means a system or circuit conductor that is intentionally grounded.

Grounding conductor means a conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

Hazardous (classified) Locations means areas which have volatile flammable liquids or excessive dust which could represent a significant fire or explosion hazard. Such locations are assigned six designations as follows: Class I, Division 1; Class I, Division 2; Class II, Division 1; Class II, Division 2; Class III, Division 1; and Class III, Division 2.

Overcurrent means any current in excess of the rated current of equipment or the ampacity of a conductor. It may result from overload, short circuit, or ground fault. A current in excess of rating may be accommodated by certain equipment and conductors for a given set of conditions. Hence the rules for overcurrent protection are specific for particular situations.

Overcurrent protection means a device such as a fuse or circuit breaker used to prevent an overcurrent.

Raceway means a channel designed expressly for holding wires, cables, or busbars, with additional functions as permitted. Raceways may be of metal or insulating materials, and the term includes rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible metal conduit, flexible metallic tubing, flexible metal conduit, electrical metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways.

Service means the conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.